

Patent Claims:

1. Electromagnetic valve, in particular for slip-controlled motor vehicle brake systems, including a first and a second valve closure member arranged in a valve housing and being able, in a coaxial arrangement in the valve housing, to open or close a first and a second valve passage, including a pressure fluid inlet and a pressure fluid outlet opening into the valve housing, with the first valve closure member being able to open or close the first valve passage positioned in the second valve closure member in response to the electromagnetic excitation of a valve coil, and with the second valve closure member opening the second valve passage under the influence of a spring exclusively in the open position of the first valve passage so that pressure fluid prevailing in the pressure fluid inlet propagates to the pressure fluid outlet along a flow route inside the valve housing in which the first and the second valve passage are positioned,  
characterized in that the spring (17) is placed outside the flow route, to what end a stop (3) is arranged in the valve housing (1) remote from the flow route, and the end of spring (17) remote from the second valve closure member (8) being supported on said stop.
2. Electromagnetic valve as claimed in claim 1,  
characterized in that the stop (3) is arranged above a transverse bore (21) opening into the valve housing (1) and being connected to the pressure fluid inlet (13).

3. Electromagnetic valve as claimed in claim 2, characterized in that the stop (3) is provided at a housing step (24) of the valve housing (1) that is positioned above the transverse bore (21) and whose inside diameter is adapted to the outside diameter of the stop (3).
4. Electromagnetic valve as claimed in claim 2, characterized in that the stop (3) is configured as a sleeve-shaped bowl in whose interior the one end of the spring (17) is supported on a bowl bottom, which is positioned with its outside surface on a housing step (24) disposed above the transverse bore (21) in the valve housing (1).
5. Electromagnetic valve as claimed in claim 4, characterized in that the stop (3) has a bowl edge remote from the bowl bottom that is angled off in a radial outward direction and bears against the inside wall of the valve housing (1).
6. Electromagnetic valve as claimed in claim 4, characterized in that an annular chamber (25) is provided between the outside periphery of the sleeve-shaped bowl and the inside wall of the sleeve-shaped valve housing (1), establishing a permanent pressure fluid connection between the pressure fluid inlet (13) and a magnet armature chamber (26) through pressure compensating openings (18) arranged in the valve housing (1) and in the sleeve-shaped bowl.

7. Electromagnetic valve as claimed in claim 6, characterized in that the spring (17) extends vertically inside the annular chamber (25).
8. Electromagnetic valve as claimed in claim 4, characterized in that the one end of spring (17) remote from the bowl bottom bears against a bead of the piston-shaped second valve closure member (8) extending through an opening in the bowl bottom towards a valve seat member (27) that is press-fitted below the transverse bore (21) into the valve housing (1).
9. Electromagnetic valve as claimed in claim 8, characterized in that the second valve closure member (8) is manufactured as a turned part from free-cutting steel.
10. Electromagnetic valve as claimed in claim 4, characterized in that the stop (3) and the valve sleeve (1) consist of a deepdrawn thin sheet, and that the pressure compensating openings (18) and the transverse bore (21) are punched or impressed therein.
11. Electromagnetic valve as claimed in claim 1, characterized in that the valve housing (1) has a one-part design, and its open sleeve end remote from the second valve passage (6) is closed by a plug (14) acting as a magnet core and being configured as a cold-heading or extruded part.

12. Electromagnetic valve as claimed in claim 1, characterized in that the second valve passage (6) is provided in a disc-shaped or sleeve-shaped valve seat member (27) being configured as a turned part or cold-heading part in conformity with the demands of automation.
13. Electromagnetic valve as claimed in claim 1, characterized in that the second valve closure member (8) is designed as a sleeve bowl made in a deepdrawing operation, the bowl bottom accommodating the first valve passage (5) cooperating with the first valve closure member (7), and in that close to the bowl bottom the peripheral surface of the second valve closure member (8) is penetrated by transverse bores (22) which are positioned in the horizontal plane of a transverse bore (21) connected to the pressure fluid inlet (13) to form a flow route with least possible rerouting, said transverse bore extending through the valve housing (1) in a horizontal direction.